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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/808,331	03/14/2001	Philip J. Lin	TEL4597P0061US	3858

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EXAMINER
KIANNI, KAVEH C

ART UNIT	PAPER NUMBER
2877	

DATE MAILED: 02/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/808,331	LIN, PHILIP J.	
	Examiner	Art Unit	
	Kevin C Kianni	2877	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *41-44 and 57-75* is/are pending in the application.

4a) Of the above claim(s) *67-75* is/are withdrawn from consideration.

5)☒ Claim(s) *63* is/are allowed.

6)☒ Claim(s) *41-44 and 57-62 and 64-65* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *67-75* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *12* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 41-44 and 57-66, drawn to signal coupling network for coupling any of N1 X N2 outputs having substantially identical static K X K interconnected networks with K^2 X K^2 general connection of modules while (K < N1) classified in class 385, subclass 17.

II. Claims 67-70, drawn to an interconnect network having K^2 different , passive signal carries which extend between and couples each of the K^2 inputs to a perspective one of K^2 outputs, classified in class 385, subclass 28.

III. Claims 71-73, drawn to a signal coupling network having interconnect modules each containing K^2 input ports and couples them to K^2 output ports wherein a separate, passive, signal carrier couples each input port to a respective output port of each module classified in class 385, subclass 15.

IV. Claims 74-75, drawn to an NxM multi-level interconnect module having a plurality of NM/K^2 modules 385, subclass 27.

The inventions are distinct, each from the other because of the following reasons:

1. Inventions Group I, claims 41-44 and 57-66, Group II, claims 67-70, and Group III, claims 71-73 and Group IV claims 74-75 are related as apparatus and product made. The inventions in this relationship are distinct if either or both of the following can be shown: (1) that the apparatus as claimed is not an obvious apparatus for making the product and the apparatus can be used for making a different product or (2) that the product as claimed can be made by another and materially different apparatus (MPEP § 806.05(g)). In this case Group IV invention can be used for making add/drop filters rather than optical switching functions.

2. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

3. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Allowable Subject Matter

5. claim 63 is allowed because the prior art in combination with other limitations of the base claim does not teach wherein each KxK module 123 comprises: a body portion which includes a plurality of LxL signal coupling networks with L< K ; K input ports coupled to the body portion; K output ports coupled to the body portion; and a plurality of signal paths, carried by the LxL signal coupling networks, the signal paths couple the input ports to the output ports.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 41-44 and 57-62 and 64-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suemura et al. (US 6243178).

Regarding claim 41, Suemura teaches a signal coupling network for coupling any one of Nl inputs to any on of N2 outputs (shown in fig. 8 items T0-T15 and R0-R15) comprising: a plurality of substantially identical, KxK signal interconnect modules (see fig. 8, items KxK interconnect signal modules 123), wherein each contains K^2 input lines, (see fig. 8-9 item 123, wherein each module 123 comprises of input lines 4^2 or K^2 lines) and couples them to K^2 output lines (see fig. 8-9 and 11, items 123 and 75 wherein 4^2 or K^2 lines of each module 123 couples to output lines 4^2 or K^2 lines of

modules75), and wherein a separate signal path couples each input line to a respective output line of each module (shown at least in figure 11, wherein item 135 input/output represent a separate signal path that couples each input line to a respective output line of each module (see col. 45, line 65-col. 46, line 11; wherein each of the input lines would have redundant exchange lines to be connected to output lines of modules).

However, Suemura does not specifically teach wherein the relationship of the above input output lines is K<NI. It is obvious to a person of ordinary skill in the art when the invention was made to reduce number of N1 modules shown in fig. 11 form 4 group modules 4x4 (K^2 Input/output) to three groups of (K^2 Input/output) so as to change the relationship of K=NI to K<N1, since this relationship would be more compact and would reduce the cost of production (col. 3, lines 33-35), also it would have been an obvious matter of design choice to since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

Regarding claim 42, Suemura further teaches wherein the plurality comprises (N1/K x N2/K) modules (shown in fig. 11, wherein the input output of plurality of modules consisting of 4 cells, $123_{0\text{-}3}$ has a relationship of N1 inputs and the 4 cells $75_{0\text{-}3}$ has a relationship of N2 outputs, the input/output relationship is of N1xN2/ K^2 or N1/K x N2/K).

Regarding claim 43, Suemura further teaches N1 input switches (see fig. 16, item 97; also col. 3, lines 43-64).

Regarding claim 44, Suemura further teaches N2 input switches (see fig. 16, item 75; also col. 3, lines 43-64).

Regarding claim 57, Suemura further teaches wherein N1 equalsN2 (see fig. 8, wherein input lines N1, T0-15 is equal to N2, R0-15 output lines).

Regarding claim 58, Suemura further teaches wherein each of the KxK signal interconnect module (see fig. 8, item 123) comprises a plurality of substantially identical LxL interconnect modules (shown in fig. 11, items 123_{0-3} and 75_{0-3}). Regarding the relationship where L<K, the arguments presented in rejection of claim 41, is analogous in rejection of claim 58.

Regarding claim 59, Suemura further teaches wherein the plurality of LxL interconnect modules comprises $(K/L)^2$ modules (see figure 11, items 123_{0-3} and 75_{0-3}; wherein the input/ output relationship is (KxK)/(LxL) or $(K/L)^2$).

Regarding claims 60-61 the arguments presented in rejection of claim 43-44, are analogous in rejection of claim 60-61.

Regarding claim 62, Suemura further teaches wherein connectivity between the inputs, the modules and the outputs is symmetrical relative to a selected centerline (shown in fig. 8, wherein the connectivity between the inputs T0-15, the modules 123 and the outputs R0-15 is symmetrical relative to a selected centerline).

Regarding claim 64, Suemura further teaches wherein the plurality of signal paths comprises K^2 paths (see fig. 8 and 11, wherein each module 75 comprises of signals $\lambda 0$-$\lambda 4$ in $75_{0-3,}$ output lines 4^2 or K^2 lines).

Regarding claim 65, Suemura further teaches wherein the signal paths comprise one of optical fibers or electrical conductors (see col. 5, lines 50-52).

Regarding claim 66, Suemura teaches a signal coupling network for coupling any one of NI inputs to any on of N2 outputs (shown in fig. 8 items T0-T15 and R0-R15) comprising: a plurality of substantially identical, static, KxK signal interconnect modules (see fig. 8, items KxK interconnect signal modules 123), wherein each contains K^2 input lines, (see fig. 8-9 item 123, wherein each module 123 comprises of input lines 4^2 or K^2 lines) and couples them to K^2 output lines (see fig. 8-9 and 11, items 123 and 75 wherein 4^2 or K^2 lines of each module 123 couples to output lines 4^2 or K^2 lines of modules75); wherein N1 inputs comprise N1/K groups of signal carriers coupled to a corresponding number of KXK modules (shown in fig. 8, items N1 inputs T0-T15,

comprise N1/K groups of signals λo-λ3 coupled to a corresponding number of KXK modules 123 (0)-123(3)).

Response to Amendment

8. Applicant's arguments filed on January 21, 2003 have been fully considered and the examiner has reexamined the amended claims accordingly.

This examiner has carefully reexamined claims 41-44 and 57-75 in view of applicant's amendments and arguments.

Regarding applicant's assertion (page 6, 2nd parag.) that Suemura does not teach the limitation 'recursively derivable, passive interconnect fabrics…' the examiner responds that this limitation is not claimed in any on the claims and further, the interconnection of the modules 123 as shown in fig. 9 are identical.

Regarding applicant's assertion (page 6, 4th parag.-page 7) that Suemura's teaching is not obvious in view of claim 8 limitation in which the number of K modules is less than K, the examiner responds that this limitation, of module numbers or size, is broadly cited in which analogous arguments presented in rejection of claim 1 applies for this claim; nevertheless, the examiner has reconsidered the more specific limitations of claim 63, and therefore this claim in conjunction with other limitations of the base claim is allowed.

The examiner notes that the applicant has not includes the limitations of the intervening claim 42 along with the limitations of the base claim 41 in order to make this claim allowable.

THIS ACTION IS MADE FINAL

9. IN view of applicant's amendments this action is made FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaveh Cyrus Kianni whose telephone number is (703) 308-1216. The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 6:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached at (703) 308-4881.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry)

or:

(703) 308-5397, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 305-4770.

Kevin Cyrus Kianni
Patent Examiner
Group Art Unit 2877

Frank Font
Supervisory Patent Examiner
Group Art Unit 2877

February 5, 2003